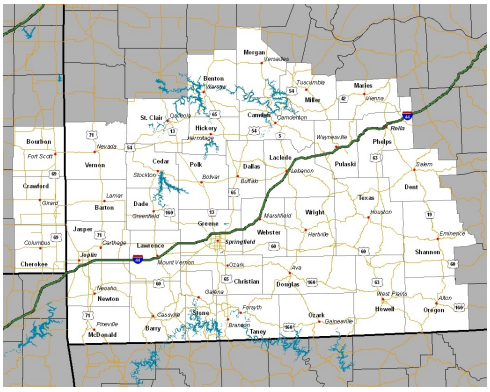
Severe Weather Decision Support

National Weather Service
Springfield, Missouri

This publication has been designed to enhance readiness and decision response by the emergency management community. Severe storms whether it be tornadoes, large hail, damaging winds or flooding can have a significant impact across the Missouri Ozarks and southeast Kansas.

Inside this issue:

Serving the Missouri Ozarks and extreme southeast Kansas



NWS Springfield has forecast and warning responsibility for 34 counties in the Missouri Ozarks and 3 counties in southeast Kansas.

NWS Springfield strives to serve decision makers with accurate and timely routine and hazardous weather information.

Severe Weather Decision Support

Severe Storm Products

National Weather Service (NWS) Springfield issues warnings for Severe Thunderstorms, Tornadoes and Flooding for 34 counties in southwest Missouri and 3 counties in extreme southeast Kansas.

Severe weather products are issued following a "Ready" → "Set" → "Go" concept as the event approaches and confidence of occurrence increases.

Severe weather warnings are issued for expected or occurring severe weather meeting specific criteria.

Severe Thunderstorm Warnings

Issued for thunderstorms producing

- Damaging winds of 58 mph (50 kts) or greater

And / or

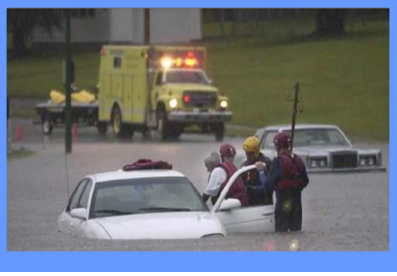
- Large hail of 1" in diameter or larger

Tornado Warnings

Issued when a tornado has been detected NWS Doppler radar or reported by storm spotters.

Flash Flood Warnings

Issued for rapidly rising water that poses a threat to life and property. This includes flooding of small streams, low water crossings and urban areas



Ready

Issue daily Hazardous Weather Outlooks to highlight potential weather hazards through 7 days.

http://www.crh.noaa.gov/sgf/?n=hwo

Be ready for potential winter weather hazards.

Set

The Storm Prediction Center issues Severe Thunderstorm or Tornado Watches 2 to 6 hours in advance of severe storm development.

http://www.spc.noaa.gov/

Severe weather is possible. Monitor and be prepared to take action.

Go

Issue warnings when severe weather is detected by radar or reported by spotters.

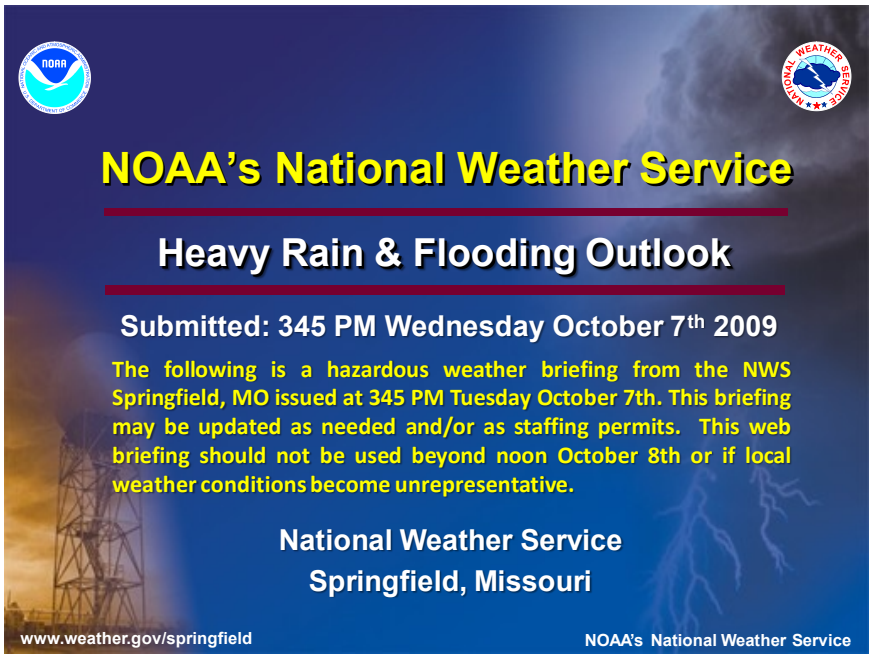
http://www.crh.noaa.gov/hazards/sgf

Severe weather occurring or imminent. Take immediate action to prepare for severe storms.

Multi-Media Hazardous Weather Briefings

In order to provide critical weather information, the NWS in Springfield, is now producing Multi-Media Hazardous Weather Briefings. The video briefings available on the NWS Springfield web site provide a summarized briefing of anticipated hazardous weather including winter storms.

These briefings will contain headline text and graphics to provide an overview of an event. Multi-media Hazardous Weather Briefings will generally be issued prior to hazard weather events. It is important to note that these briefings are not a substitute for other NWS products and warnings, but serves to compliment these services.



Video web briefings may be submitted for the following events.

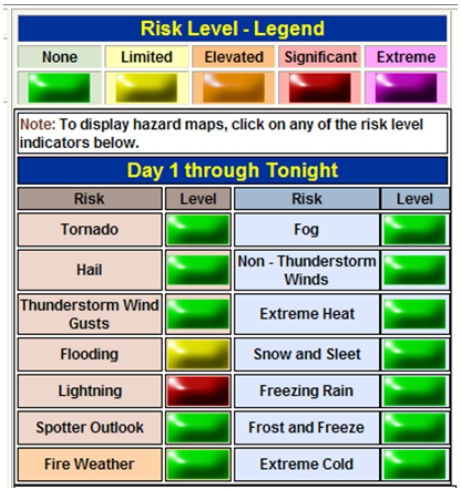
- Severe Weather – Slight, Moderate or High risk of severe thunderstorms or high confidence of significant coverage of severe weather.
- Flooding – Flash flooding of numerous small streams or low water crossings as well as significant river flooding.
- Winter Storm– Winter storms with significant accumulation and/or resulting in significant impact.
- Other significant events - High wind events, etc.

http://www.crh.noaa.gov/sgf/?n=webbriefing

Enhanced Hazardous Weather Outlook

The Enhanced Hazardous Weather Outlook (EHWO) is a decision support service that supports preparedness and response efforts prior to and during hazardous weather. The EHWO provides decision makers with convenient access to potential weather hazard information by graphically depicting the risk of weather hazards through day seven.

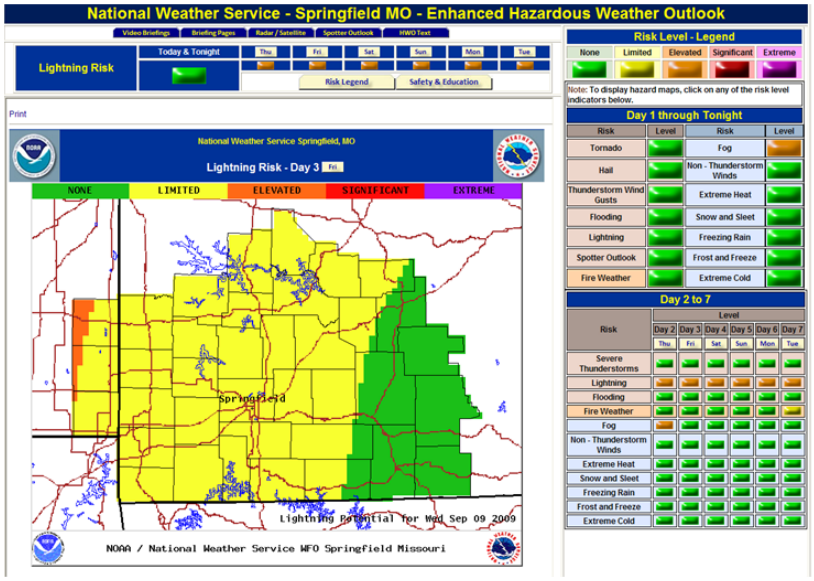
The EHWO packages five-level, color coded alert buttons and text within a comprehensive web page suite.



http://www.crh.noaa.gov/sgf/?n=dec_sup_main

The Enhanced Hazardous Weather Outlook (EHWO) page provides:

- Weather Hazard Graphics depicting the type, severity and coverage of weather hazards
- Hazardous Weather Buttons conveying hazardous weather risk levels for a given day
- Hazardous Weather Outlook text
- Spotter Outlook Graphic that portrays the need for spotter activation
- Link to briefing pages that provide packaged information for a given weather hazard
- Links to video briefings that elaborate on a given hazardous weather event
- Links to GOES satellite and NEXRAD radar
- Risk Legend section that defines the risk levels
- Safety and Education information for a given weather hazard

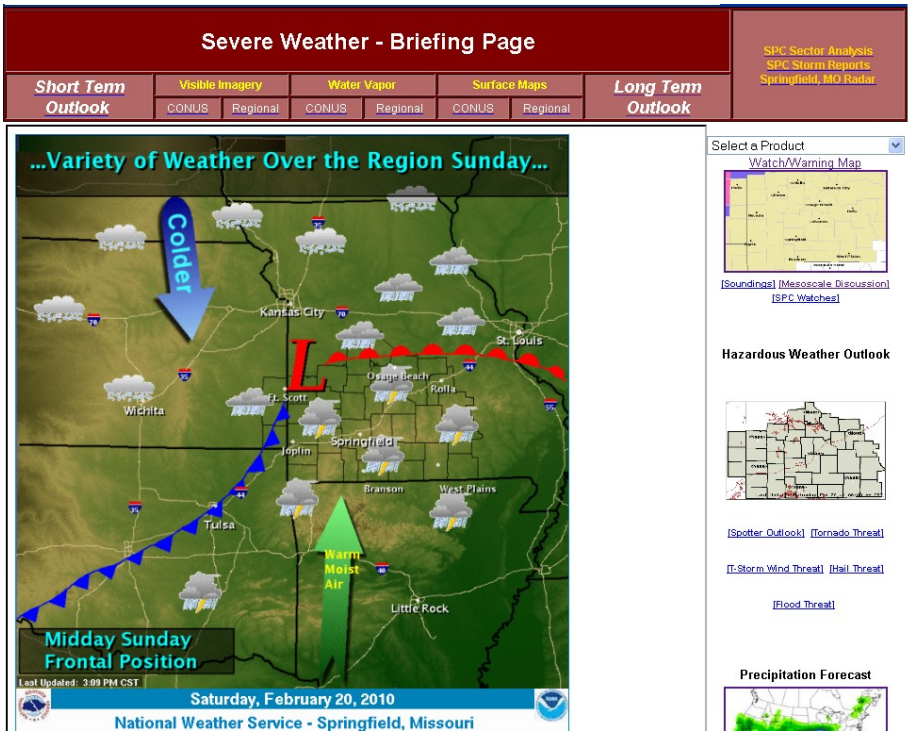


Severe Weather Decision Support

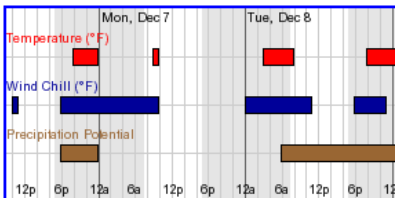
Severe Weather Web Briefing & Decision Support Pages

Knowing that time is short, the NWS has created briefing pages to serve as a one stop shop for winter storms, severe weather, heavy rain, drought, and recreational forecasts. By quickly highlighting the threats, these sets of graphics provide instant situational awareness.

http://www.crh.noaa.gov/sgf/?n=severebrief



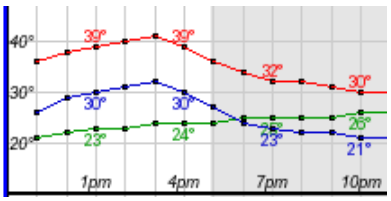
Weather Forecast Planning Tools



Weather Planner

This interactive forecast display allows users to produce forecast for general planning purposes based on user defined parameters.

http://forecast.weather.gov/wxplanner.php?site=sgf



Interactive Forecast Map

Hourly Weather Graphs and tables are available using the interactive forecast map. Simply select the forecast format you desire and select the location of choice.

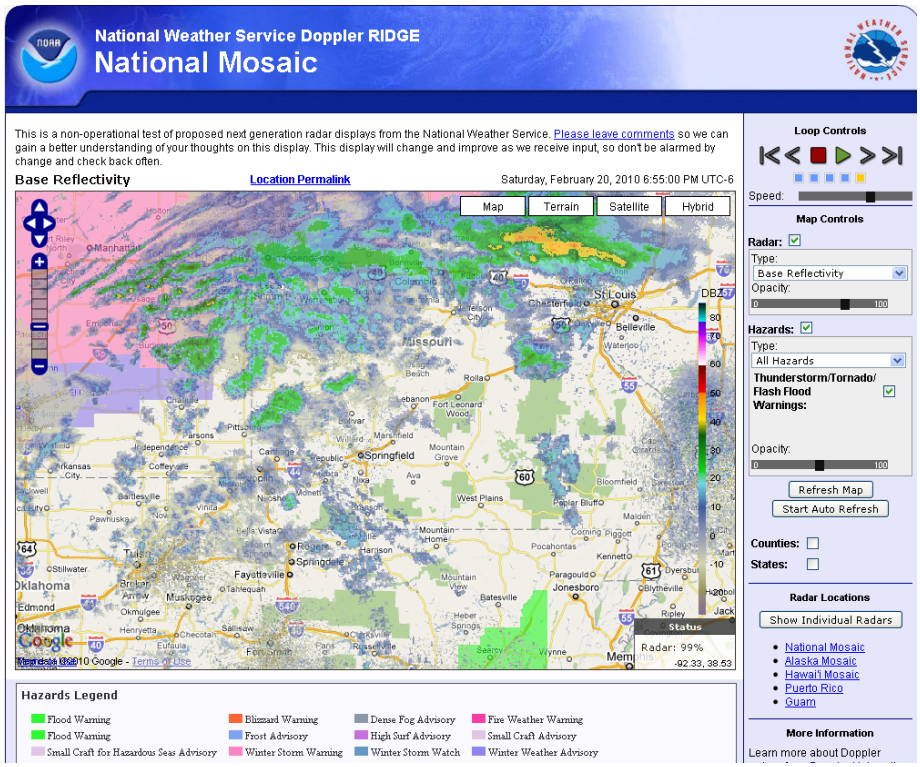
http://forecast.weather.gov/gridpoint.php?site=sgf

Geographic Information Systems (GIS) Tools

Geographical Information Systems (GIS) can be a useful tool to monitor weather information and assess weather impacts. Most any type of weather information can be displayed on multiple geographic layers through GIS applications such as Google Earth. This type of visualization tool can enhance situational awareness and support more informed decisions.

New RIDGE 2 Radar

This radar display allows users to overlay radar imagery with watch and warning polygons on an interactive geographical display.



http://radar.srh.noaa.gov/

GIS data on a virtual globe platform such as Google Earth can be utilized during severe weather events to assess the potential risk and impact. Weather information including radar, surface observations, warning polygons, etc. can be viewed in GIS applications.

National Weather Service GIS Resources:

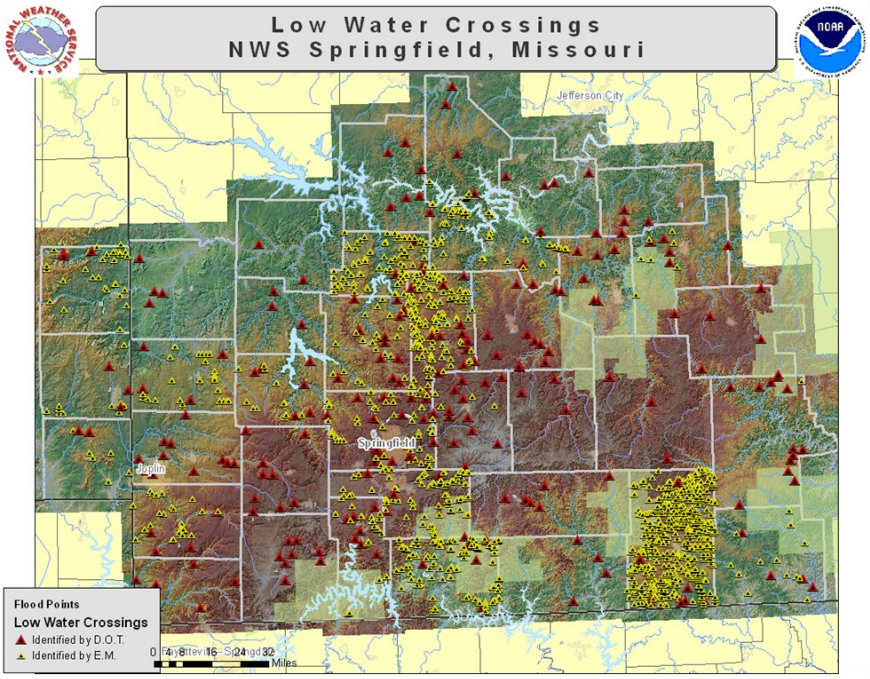
http://www.srh.noaa.gov/gis/kml/

http://www.crh.noaa.gov/sgf/?n=gisday

Flash Flood Risk Analysis Project

Flooded low water crossings pose a serious threat to life in the Ozarks. Hundreds if not thousands of low water crossings dot the landscape of the Ozarks and are routinely traveled by many. Recent flood events have demonstrated the dangers of low water crossings with numerous water rescues. To locate and better understand flood prone areas, NWS Springfield has developed the Flash Flood Risk Analysis Project. For more information go to...

http://www.crh.noaa.gov/sgf/?n=ffrap_index

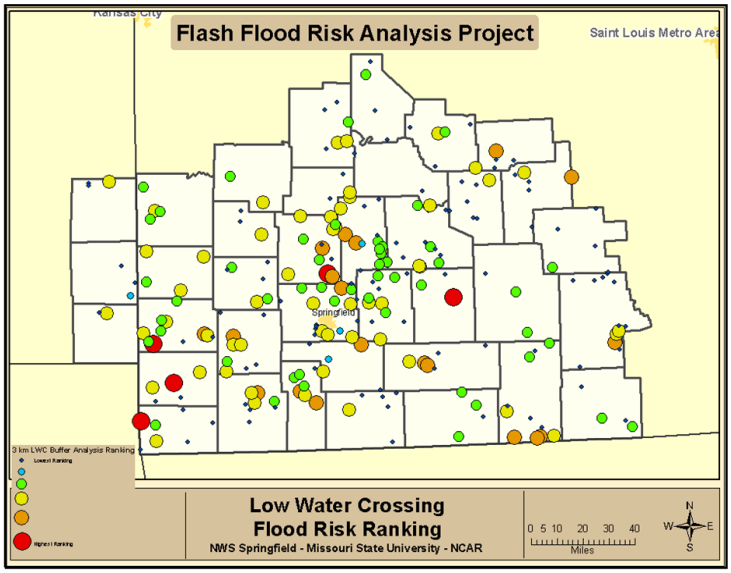


Over 1500 low water crossings have been plotted.

Low water crossings are being analyzed to understand their frequency, impact and overall risk.

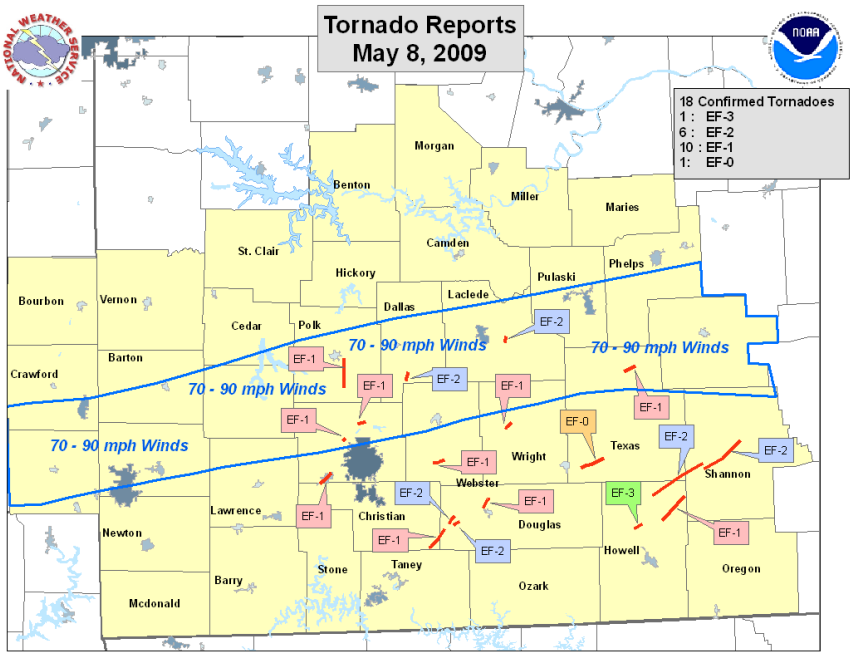
To view the locations of low water crossings and the accompanying risk level go to ...

http://www.crh.noaa.gov/sgf/?n=ffrap_lwc

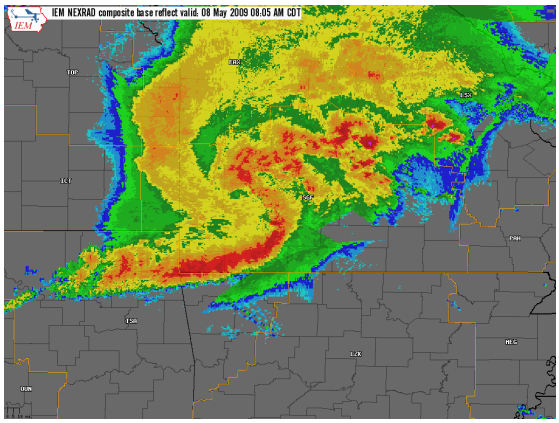


May 8th, 2009 Severe Weather Event

Severe thunderstorms in the form of a derecho (A widespread, long-lived thunderstorm induced wind storm) caused widespread wind damage across the Missouri Ozarks and southeast Kansas Friday, May 8th 2009. This derecho produced widespread winds of 60-90 mph across a large portion of southeast Kansas and southwest Missouri, and continued to produce these winds well to the east into Illinois and Kentucky. In addition to the powerful winds, 19 tornadoes were spawned within the line of thunderstorms, several of which were strong tornadoes in the EF-2 and EF-3 range with winds of up to 165 mph. Finally, very heavy rainfall with these storms resulted in significant flash flooding across much of the region.



Not only were significant winds observed along the leading edge of this powerful line of thunderstorms, but behind it as well. A persistent rush of air, primarily from the northwest, was estimated to reach as high as 90 mph, and winds of 60 mph or greater lasted as long as 20 to 30 minutes.

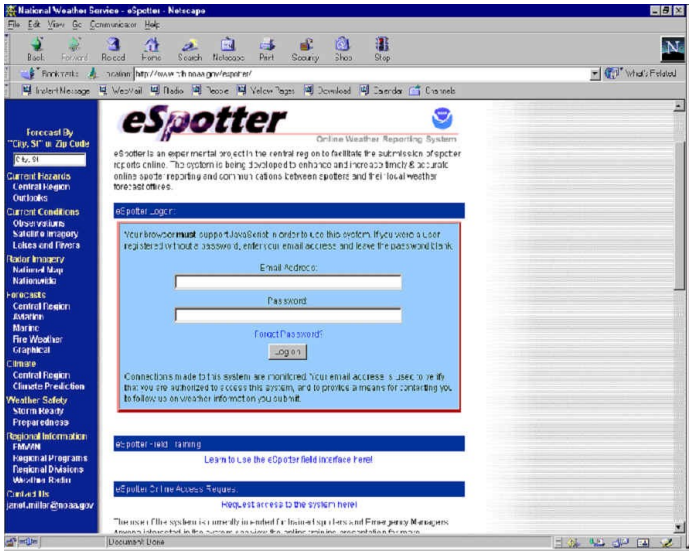


The strong winds both at the leading edge of the line and well behind it caused significant damage, uprooting, snapping, or damaging thousands of trees, destroying or damaging barns and other outbuildings, moving mobile homes from their foundations, and even causing some structural damage to well built homes.

Communication

Effective communication is critical during severe weather to ensure accurate and timely information is disseminated to the proper authorities, the National Weather Service and the general public. The diagram below illustrates the basic flow of information.

eSpotter



eSpotter is a system to facilitate the submission of spotter reports online. The system enhances and increases timely & accurate online spotter reporting and communications between spotters and their local weather forecast offices. The use of the system is currently available for trained spotters and emergency managers.

To sign up go to...

http://espotter.weather.gov/

Twitter

The National Weather Service has started a testing phase to assess the potential for Twitter as a public weather reporting tool. During hazardous weather, reports of what is happening in your area can help forecasters make important decisions about warnings. Twitter may provide us with an easier way of getting some of those reports. A number of offices across the country, including the Springfield Weather Forecast Office, will be monitoring a specialized search page during significant weather events that will show weather reports posted on Twitter.

http://www.crh.noaa.gov/news/display_cmsstory.php?

Severe Weather Decision Support

National Weather Service
Springfield, MO Weather Forecast Office
Springfield-Branson Regional Airport
5805 West Highway EE
Springfield, MO 65802-8430

The mission of the National Weather :

The National Weather Service (NWS) provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, for the protection of life and property and the enhancement of the national economy.

NWS data and products form a national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community.

http://www.weather.gov/springfield

Storm Report Resources

Storm Prediction Center

http://www.spc.noaa.gov/climo/online/

Climatic Data Center

http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms

NWS Springfield Severe Weather Climatology

http://www.crh.noaa.gov/sgf/?n=severeweatherclimatology